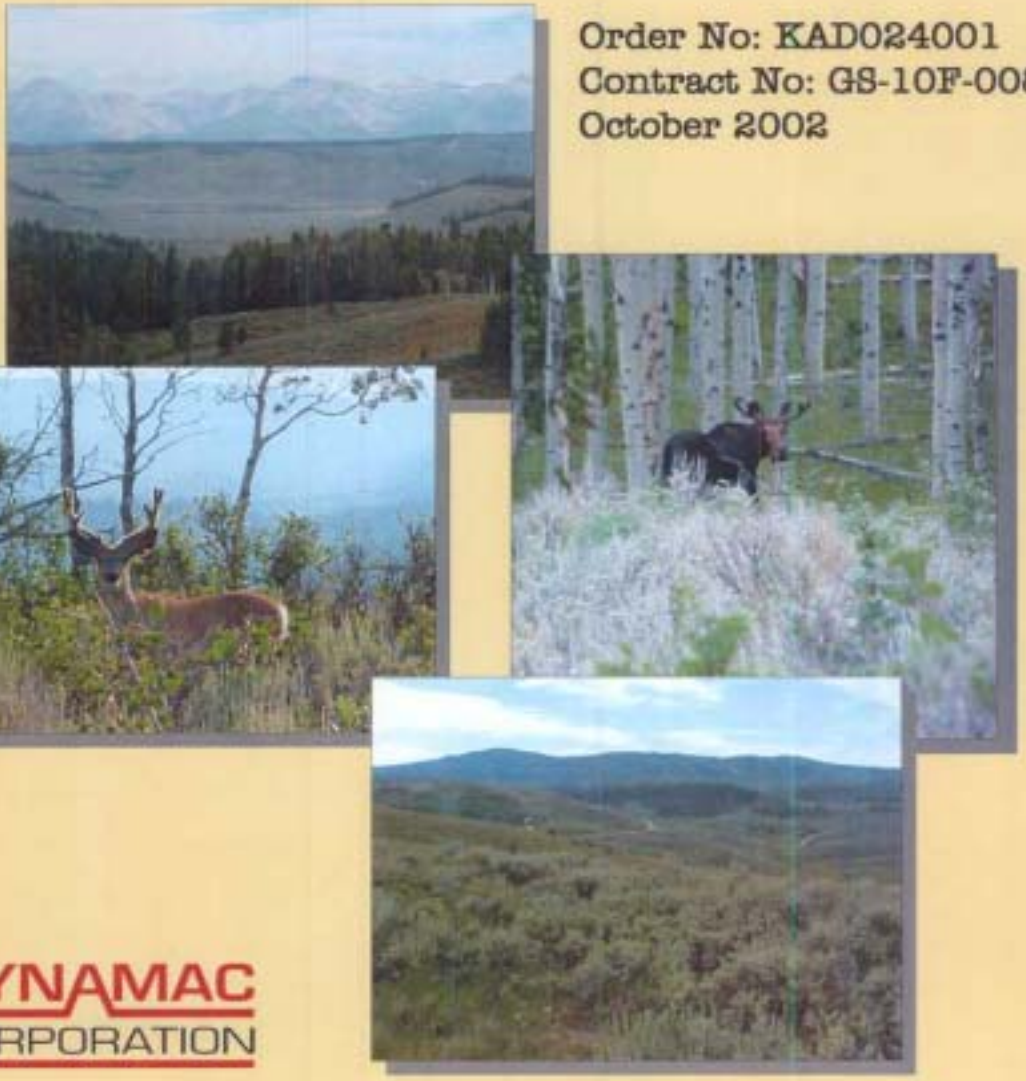
WILDLAND-URBAN INTERFACE COMMUNITIES-AT-RISK PROGRAM

Mitigation Report
BLM Pinedale Field Office, Wyoming
Hoback Ranches Assessment Area



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DYNAMAC CORPORATION

FINAL

WILDLAND-URBAN INTERFACE, COMMUNITIES-AT-RISK MITIGATION REPORT

PINEDALE FIELD OFFICE
HOBACK RANCHES ASSESSMENT AREA

Prepared for:

U.S. Department of the Interior
Bureau of Land Management
Pinedale Field Office
Pinedale, Wyoming

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ACRONYMS

amsl	above mean sea level
ATV	All Terrain Vehicle
BLM	Bureau of Land Management
CRP	Conservation Reserve Program
GIFF	Gateway Interagency Fire Fund
GVW	Gross Vehicular Weight
NFPA	National Fire Protection Association
NRCS	National Resource Conservation Service
NWCG	National Wildfire Coordinating Group
USFS	U.S. Department of Agriculture, Forest Service
WUI	Wildland-Urban Interface

1.0 EXECUTIVE SUMMARY

During the 2000 fire season more than 6.8 million acres of public and private lands burned, resulting in loss of property, damage to resources, and disruption of community services. Many of these fires occurred in wildland-urban interface (WUI) areas and exceeded fire suppression capabilities. To reduce the risk of fire in the WUI, the President of the United States directed the Secretaries of the Departments of Agriculture and the Interior to increase federal investments in projects to reduce the risk of wildfire in the WUI. To this end, the Bureau of Land Management (BLM), Pinedale Field Office, is currently in the process of forming partnerships with local governments to plan fuels reduction treatments and other mitigation measures targeted at the WUI in the vicinity of federal lands. These partnerships are indicative of a shared responsibility to reduce wildland fire risks to communities.

The WUI occurs where human structures meet or intermix with wildland vegetation. In certain situations, specific actions such as fuels reduction around communities, forestland and rangeland restoration, infrastructure improvements, and public education and outreach may reduce the risk of catastrophic fire in the WUI. As a result, the BLM implemented the Communities-at-Risk, Wildland-Urban Interface Program. The program seeks to reduce the hazard of wildland fires to communities through public outreach, the reduction or prevention of fuel build-up, and by increasing the fire protection capabilities of communities. The Hoback Ranches community was selected by the BLM to assess the hazard of wildland fire and to identify specific actions that may reduce the risk.

BLM contracted with Dynamac Corporation (Dynamac) to support the assessment of wildfire risk to the Hoback Ranches area, specifically along the WUI. Dynamac scientists conducted fuel surveys by categorizing the vegetation, slope, and aspect of the land in the Hoback Ranches assessment area. The risk of wildland fire to homes, structures, and cultural resources on private land was also evaluated according to building materials, the presence of survivable space, road access, and the response time of the local fire department. Dynamac assessed the adequacy of the community's service infrastructure (including roads, water supplies, and fire fighting equipment) by systematic observation, and by interviewing community officials and fire prevention personnel. A community open house was held to disseminate information about the Communities-at-Risk, Wildland-Urban Interface Program to citizens, to afford them the opportunity to identify resources that are of value to the community, and to have them identify actions that may reduce the risk of wildland fire. The information gathered from the fuel

surveys, structural surveys, interviews, infrastructure assessments, and community profile was integrated into two reports: a hazard assessment report and a mitigation report. The following actions items were identified to reduce the hazard of wildfire in the Hoback Ranches assessment area based on the data collected, hazardous conditions observed during the assessment, and the threats posed by fire to the community:

- Secure access, temporary or administrative, to BLM lands in the assessment area and initiate forest health measures combined with fuels treatments on BLM lands in the assessment areas in multiple phases.
- Pursue land exchange options between BLM and the State of Wyoming for BLM lands within the assessment area if access to BLM lands cannot be obtained.
- Redevelop and maintain water storage ponds and bladders at specific locations in Hoback Ranches, coordinated with Hoback Ranches Fire Committee, Sublette County Fire Department, BLM, and US Department of Agriculture, Forest Service (USFS).
- Coordinate the examination/modification of Hoback Ranches covenants with the Sublette County Fire Department and the Hoback Ranches Covenant Committee.
- Reduce fuel loading next to roads and homes within Hoback Ranches.
- Improve Hoback Ranches' main east-west road, Rim Road, in T36N R112W Section 9.
- Continue the ongoing education and outreach program throughout the assessment area to assist homeowners with firewise practices and procedures.
- Plan aggressive wildfire prevention strategy during summer months within Hoback Ranches.
- Construct shaded fuel breaks on the borders between BLM lands and private lands.

2.0 GOALS AND OBJECTIVES

The goals and objectives of the Hoback Ranches wildfire hazard assessment and mitigation plans are to evaluate the hazards of wildland fire within the assessment area and then identify specific actions that could reduce the risks. The objectives are to decrease the chances of wildfire spreading from BLM lands onto private lands while, correspondingly, decreasing the risk of wildfire spreading from private lands onto BLM lands, and to protect life, property, structures and other valued resources in the community.

3.0 BACKGROUND

Wildland fire is an integral component of many forest and rangeland ecosystems. In the conterminous United States, before European settlement, an estimated 145 million acres were annually consumed by wildfire. In comparison, only about 14 million acres are currently burned annually due to increased agriculture, urbanization, habitat fragmentation, and fire suppression programs. This change from the historical fire regime to the present day has caused a shift in the native vegetation composition and structure of fire-prone ecosystems, such as some forests and rangelands, resulting in a dangerously high accumulation of fuels. As a result, when wildland fires do occur, they may burn larger and hotter than those in the past and pose an increased risk to human welfare and ecological integrity.

4.0 EXISTING SITUATION

Hoback Ranches provides homeowners with relatively easy access to Pinedale and Jackson, Wyoming and numerous recreation activities on private, BLM, and USFS lands. The development nearest to Hoback Ranches is Bondurant, Wyoming. Occupants of Hoback Ranches have numerous recreational opportunities within and near the community, including scenic vistas, birding, wildlife observation, all-terrain vehicle (ATV) riding, motorcycle riding, hiking, cross country skiing, snow machine riding, and snowshoeing. There are approximately 106 homes within the assessment area and new homes are under construction. Hoback Ranches is approximately 35 miles north of Pinedale and 45 miles south of Jackson, Wyoming. The Hoback Ranches development is located to the west and south of State Highway 189/191. USFS lands border this community to the north and west, and BLM and private lands border Hoback Ranches on the southern and eastern sides. Fire suppression for the area is accomplished by the Sublette County Fire Department on private lands and by the USFS on public and forest lands.

The major land use in the immediate area is recreation. Livestock grazing occurs on BLM and USFS lands, post/pole sales and grazing on adjacent State of Wyoming lands, and grazing on private land not located within Hoback Ranches. Access to BLM lands is very limited. Land- and homeowners in the Hoback Ranches subdivision are subject to certain restrictions on their properties, deemed "covenants." According to the Hoback Ranches website, www.hobackranches.com, "Hoback Ranches is guided by a vision expressed in its perpetually binding covenants: to ensure the use of the property for attractive residential purposes, to prevent nuisances, to prevent the impairment of the attractiveness of the property, to maintain the natural

environment and protect the ecology of the area, and thereby secure to each owner the full benefit and enjoyment of the land." These "covenants" include restrictions on grazing, on tree removal, and various other land use issues, and are available at http://www.hobackranches.com/Covenants.html. The covenants allow horse ownership on private properties, but disallow grazing by domestic ungulates, and are perpetually active, legally binding, and enforceable.

Elevations in the assessment area range from 7,000 to 8,400 feet above mean sea level (amsl) at Kismet Peak. Topography varies from rolling hills to steep and mountainous terrain.

The area assessed for wildfire hazards is comprised of portions of townships T36N R112W and T36N R113W (**Map 1**).

The dominant hazardous fuels in the assessment area are the overstocked mixed conifer stands with saplings as ladder fuels that occur on lands south and north of Hoback Ranches and on private land in the eastern sections of Hoback Ranches. Aspen stands and sagebrush/grass fuel types did not receive fuel hazard assessments. Sagebrush/grass fuels on Hoback Ranches can present hazardous fuel conditions on slopes of the assessment area in late summer and fall. Resistance to control in the sagebrush/grass fuel will not be as great as in the mixed conifer fuel-type areas; however, if wind and slope combine or align, rates of spread will increase exponentially.

The assessed mixed conifer fuel types will exhibit a high resistance to fire control and make initial attack difficult when fire danger ratings are high, combined with low relative humidity and fuel moisture, and a high Haines index. Continuous fuels, downed, dead, woody material, ladder fuels (seedling and saplings), and standing dead (snags) or dying trees will enable torching, crowning out, and spotting. Observed stand density on some slopes will enhance the possibility of a crown fire. Wildfire in the mixed conifer of Hoback Ranches assessment area will be topographically influenced in combination with fuels and wind. The possibility of ignition in both lodgepole/mixed conifer and sagebrush/grass fuel types is high, due to vehicular traffic on roads in the assessment area, and due to lightening strikes associated with summer thunderstorms. The fuels assessment area includes numerous topographic features that will increase rates of spread, and allow fires to "roll out" beneath fire fighters or spot over roads (steep slopes, draws, and chutes). With present fuel loading, the eastern part of Rim Road, and other mid-slope roads in the assessment area, should not be relied upon as fire breaks.

A companion report to this volume, the Hazard Assessment Report for the Hoback Ranches assessment area, presents and summarizes data for fuel and terrain conditions. These data are also summarized in brief, below. Classes A, B, and C refer to low, moderate, and high hazard conditions, respectively.

- **Slope:** 12.5 percent of the survey sites occurred on slopes that were less than 10 percent (Class A). 37.5 percent occurred on moderate slopes (Class B) and 50 percent occurred on steep slopes (Class C).
- **Aspect:** 75 percent of the sites had northern exposures (Class A) while 25 percent were on east (or relatively level) facing slopes (Class B).
- **Elevation:** The elevations for all the survey sites were between 7,100 and 8,250 feet amsl (Class A).
- **Fuel Type:** One hundred percent of the fuel survey points had heavy fuels (Class C).
- **Fuel Density:** One hundred percent of the sites had heavy continuous fuels, (Class C) with moderate to heavy downed/dead woody fuel and an abundance of fir sapling ladder fuels. All were rated as Fire Behavior Fuel Model 10.
- **Fuel Bed Depth:** One hundred percent of the sites had a fuel bed depth of greater than three feet (Class C).

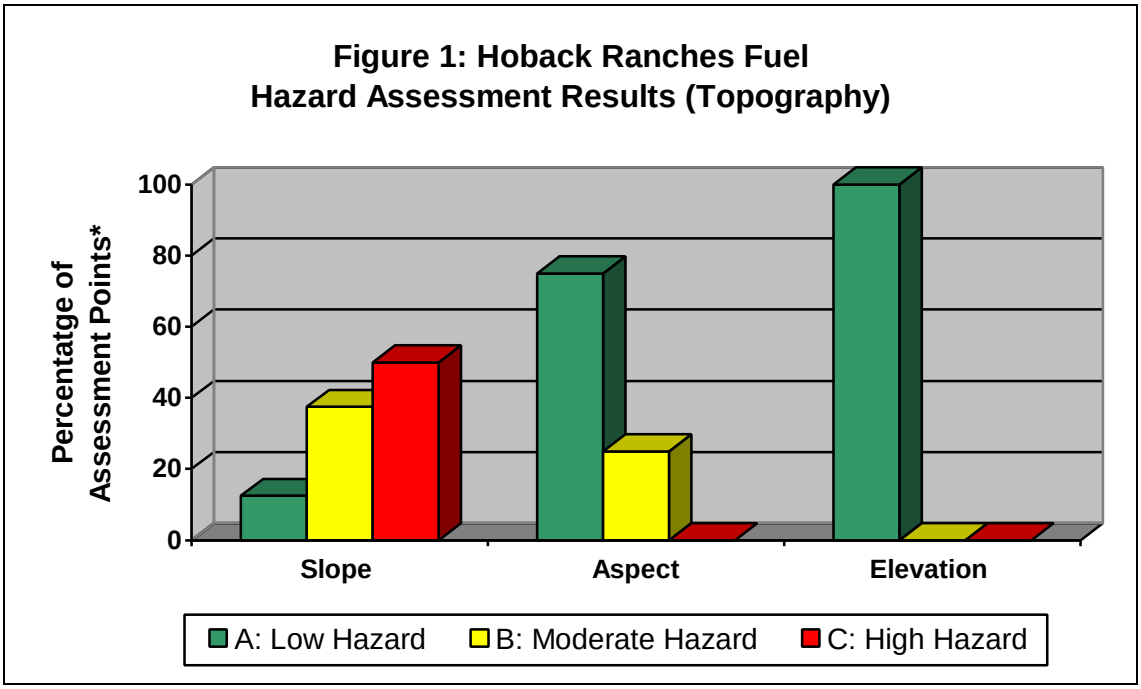
A second component of the Hazard Assessment was to characterize structures in the assessment area, for structure density, building materials, proximity to fuels, presence of a survivable space, and roads/accessibility. Fourteen sections were evaluated that contained structures such as homes or buildings, which occurred on private land within one mile of public land. All structures are located within the Hoback Ranches subdivision. Homes were variable in age and size, with some new homes under construction. Again, Class A, B, and C, refer to low, moderate, and high hazard situations, respectively. The main points of the structural survey are as follows:

- **Structure Density:** One hundred percent of the sections had less than one structure per 10 acres (Class C).
- **Proximity to Structures:** Of the structures surveyed, 72 percent were individually rated as high hazard, 22 percent were rated as moderate hazard, with fuels within 40 to 100 feet of structures (Class B), and six percent as low hazard, with fuels greater than 100 feet from structures (Class A).

- **Predominant Building Materials:** Seventy-seven percent of the sections with structures had a majority of homes with fire resistant roof and/or siding (Class A). Twenty-three percent of sections surveyed had between 10 and 50 percent of structures within constructed with fire resistant roof and/or siding (Class B). Even though most of the structures were roofed with metal or other fire retardant material, all were constructed of log or wooden siding that appeared not to be fire retardant. Roof type totals for all sections included five composite roofs, one tar roof, nine shake roofs, 89 metal roofs, and two foundations without roofs.
- **Survivable Space:** In 87 percent of the sections with structures, between 10 and 50 percent of the homes within had survivable space surrounding them (Class B, 40-100 feet). Thirteen percent contained homes with less than 10 percent having survivable space (Class C, less than 40 feet). The 87 percent/13 percent figure is representative of homeowner awareness and homes in different fuel types (aspen or sagebrush/grass versus mixed conifer). Covenants between Hoback Ranches residents also play a role, especially in the mixed conifer stands.
- **Roads:** One hundred percent of the sections had roads that were somewhat maintained (graveled and graded), but generally narrow with no shoulders (Class C). Pullout areas were widely spread and few turn-around areas existed, except for driveways. As stated previously, the predominant east/west road, Rim Road, is in need of additional engineering and support in Section 9.
- **Response Time:** One hundred percent of the sections had a response time of greater than 40 minutes, mainly due to distance from fire suppression forces, and the narrow, steep roads found within the area (Class C). Aerial fire suppression assistance from federal and state authorities for wildfires would be variable dependent upon other fire suppression commitments. A 40-minute response time for BLM air tankers from Pocatello, Idaho, Grand Junction, Colorado, or from USFS helitack crews/rappellers in Jackson, Wyoming is possible but is not likely and should not be expected.
- **Access:** Roads in all sections are narrow, steep, and/or are a single lane (Class C). County fire truck access is from State Highway 189/191, north of Hoback Ranches. Most roads are one-way in and one-way out. The eastern part of the Rim Road may not be capable of supporting fire trucks (engines).

The data from the fuels hazard assessment is also graphically depicted in Figures 1 and 2. The charts depict the percentage of fuel assessment points, based on a total of eight assessment points surveyed, that received a high, moderate, or low hazard ranking. The percentages of assessment

points for hazards to structures are graphically depicted in Figure 3. The attributes pertaining to proximity to structures, predominant building materials, and survivable space were analyzed in the 14 sections that contained structures within the 23 and one-half sections of the assessment area.



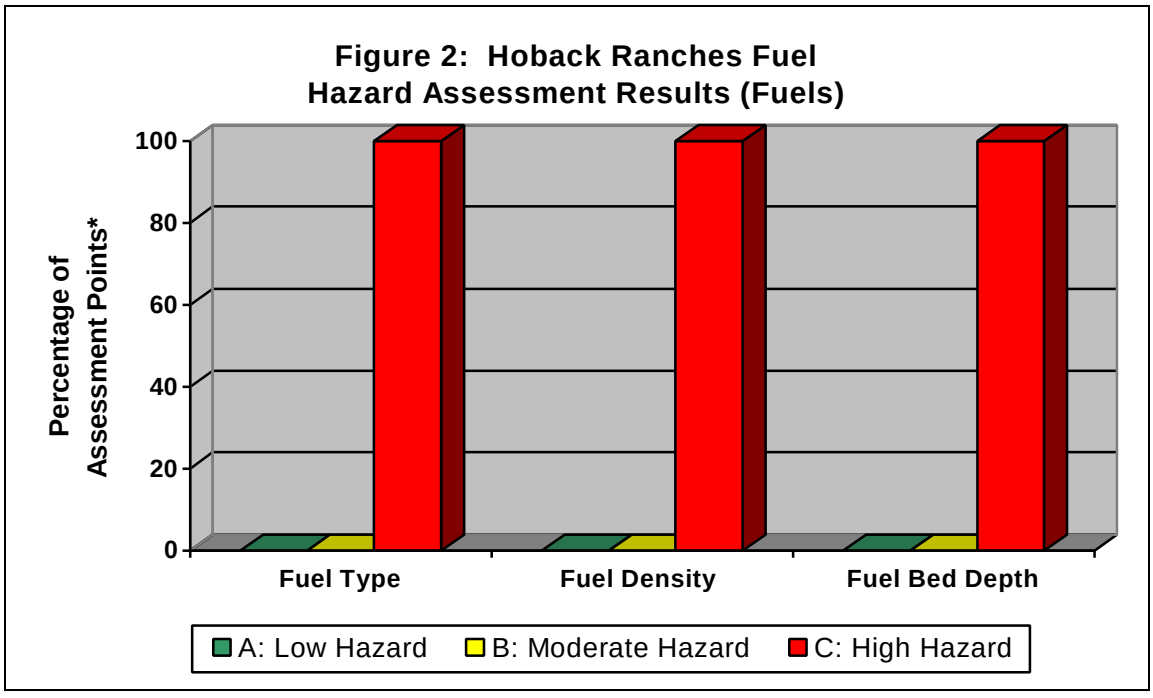
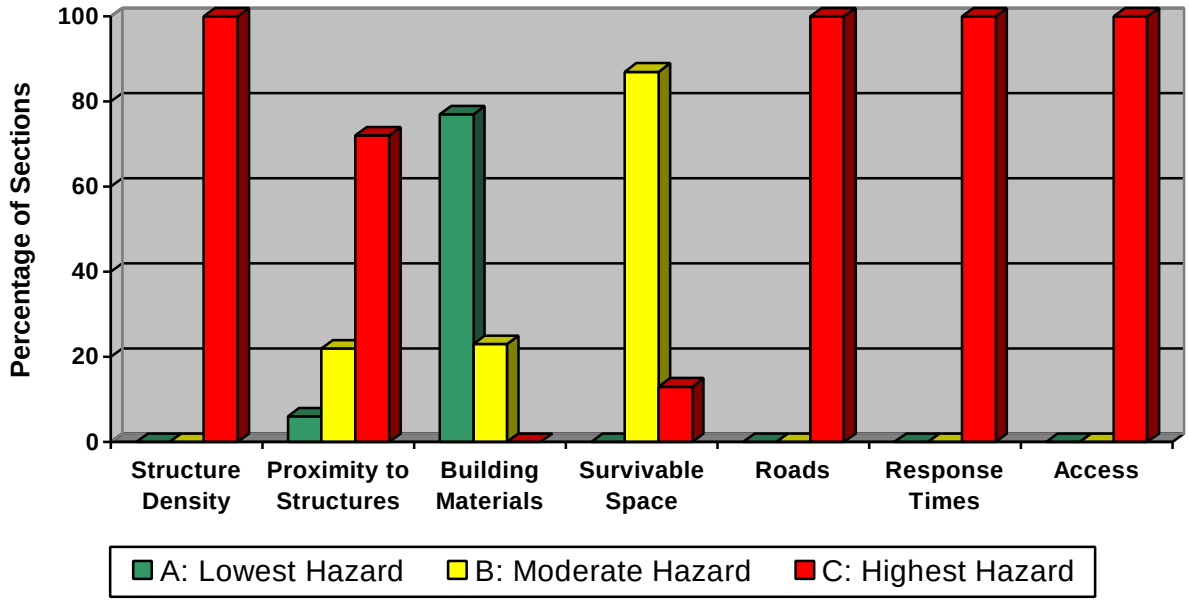


Figure 3: Hoback Ranches Structure Risk Assessment Results



5.0 SUGGESTED ACTIONS TO ACHIEVE A DESIRED CONDITION

Based on the interviews with community officials, discussions during the public meeting, and survey form responses, Dynamac ascertained that the following actions should occur in the Hoback Ranches assessment area:

- Continue the cooperation among BLM, USFS, and State of Wyoming, Sublette County, and local residents concerning wildland fire and forest health issues. A memorandum of understanding or similar agreement between the BLM Pinedale Field Office and the Bridger/Teton National Forest directed at mitigating forest health and fuels issues in the Hoback Ranches assessment area would provide for increased effectiveness in planning and completion of required regulatory documents while decreasing federal duplication of work. This type of teamwork and coalition building within federal agencies, State and Counties is supported by the National Fire Plan.
- Reduce diseased timber and fuel loadings on adjacent Public Lands within the WUI.

- Reduce the build-up of fuels and diseased trees within the WUI on private lands, along roads, and near homes in the assessment area.
- Construct shaded firebreaks along the borders between public lands and private lands.
- Improve upon and create additional water storage points for fire suppression.
- Continue the distribution of educational materials to residents in order to promote knowledge and understanding in implementing proper firewise activities such as landscaping, use of fire resistant building materials, proper access roads, and emergency evacuation procedures.
- Maintain wildlife habitat and scenic quality of the assessment area.

6.0 NEED FOR ACTION

Wildfire occurrence in or around the Hoback Ranches assessment area is not common. Ignition usually results from natural causes, although human-caused ignition risk is high. The hazard of wildland fire is very high because of the buildup of standing dead, dying and diseased trees; semi-continuous, heavy, downed, dead, woody material; ladder fuels; canopy spacing; topography in conifer forest stands; and the closeness of fuels to structures. Evidence of a past stand-clearing fire was found in areas of the eastern half of the assessment area.

Wildland fire risk is also increased due to forest health issues, such as infestations of various parasites in the conifers, that results in standing dead, red-needled, or dying trees. High canopy densities, combined with even age conifers and heavy loadings of downed, dead, woody material yield minimal vegetative biodiversity. This scenario, combined with topography, will enable the propagation of crown fires. Fuel loadings, private home placement, and adjacent public lands in the eastern half of the assessment area combine to produce a high potential for wildfire occurrence and increase risks, should a fire occur. Additionally, private land covenants, though well-intended, contribute to hazardous fuel loadings near homes and along roads because residents are restricted to cutting only trees less than 3 inches in diameter.

Both general and specific actions are needed to mitigate the wildland fire risk, improve forest health and enhance vegetative diversity. General actions include the adherence to firewise practices within the assessment area. The vegetation growing around structures and along roads needs to be maintained at an acceptable level. The recommended firewise distance to achieve a survivable space is a 40-foot perimeter around a home or structure, which should also be properly landscaped with fire-resistant vegetation. Greater distances are needed if the structures are on a slope. Prescribed methods to maintain the vegetation are the use of hand crews,

mechanical removal or herbicidal treatments (limited use). All vegetation removed should be piled and burned or transported to a designated landfill or composting facility. There are numerous instances where lodgepole pine, subalpine, and Douglas fir trees are growing close to structures. A professional arborist should carefully remove these trees or remove limbs that hang over structures or that are within 30 feet of the ground. These firewise practices are general, but long-term in nature, because they require continual adherence to reduce the hazard of wildfire.

Secondly, the Hoback Ranches community should examine the current covenants and consider certain modifications. One suggested modification is to allow individual property owners to submit requests for thinning, piling, and winter burning or removal (conducted in coordination with the Sublette County Fire Department and the Hoback Ranches Covenants Committee). Burning of piles should be planned and executed during times that allow adequate smoke dispersal and when approved by the fire department. Removal of fir and pine saplings located adjacent to roads should also be implemented as a ladder fuel mitigation step.

Removed vegetation can be disposed of by using a chipper and transported to Riverton for purchase, hauled to a dumpsite, or piled and burned in the winter, as stated above. Employment of horse logging for post and poles and fuel reduction on private lands and next to Rim Road in the assessment area should continue, specifically in portions of Sections 4, 5, 6, 9, and 10, T36N R112W, with road or approach access.

Hoback Ranches is also in need of additional water sources. The water sources can be distributed throughout the property where they can be accessed in the event of a fire. This can be accomplished by several methods. One expedient, inexpensive method is the acquisition of 5,000- to 10,000-gallon bladders through federal excess by the Wyoming State Forestry Division and the USFS or BLM. These bladders can be strategically placed, anchored, and filled in summer months by water tenders, and drained and stored during winter. The bladders are generally not aesthetically pleasing and the 10,000-gallon bladders can be difficult to manage. Anchoring of the bladders is important.

Road improvements are needed on the portion of Rim Road that has a load limit. The current limit of 8,000 pounds gross vehicular weight (GVW) will not support most wildland fire engines. Improvements should include rip-rap near culverts and hyroseeding of exposed soils up slope of the road-cut with a mix of native cool-season grasses. The road also needs engineering support

on the down slope side to increase load limits and prevent further loss of ingress and egress to the area.

The general and specific recommendations for private lands within the Hoback Ranches community should be accomplished by private landowners, in coordination with Hoback Ranches Improvement District, Hoback Ranches Covenant Committee, Wyoming State Forestry Division, and the Sublette County Fire Department, with possible cooperative agreements with the USFS and BLM.

For public land within the Hoback Ranches assessment area, the BLM should secure an administrative and/or temporary access to its property, which is currently inaccessible except through private land. This would allow for the evaluation, processing, and initiating of fuel reduction projects, as required. Sections 3, 5, 8, 9 and 10, in Township 36 North, Range 112 West, require improved accessibility. Should BLM be unable to secure access to the public lands with the intent of progressing and implementing forest health and fuels reduction projects, a land exchange with the Wyoming State Forestry Division could be proposed.

Flammable fuels should be reduced in overstocked subalpine fir, Douglas fir, lodgepole pine-mixed conifer stands on BLM, USFS, and private lands. Diseased and dying trees should be designated for removal. Commercial tree thinning and tree removal using horse logging and light mechanical methods will need to be employed to successfully mitigate forest health issues and reduce the buildup of hazardous fuel loadings and ladder fuels in mixed conifer stands. Projects funded by the Interagency Joint Fire Sciences program have indicated that thinning alone will reduce possible crown fires for 15 to 20 years whereas thinning combined with selective tree removal will reduce crown fire possibility significantly for over 50 years. A “no action” decision would exacerbate the current fuel loading problem, increase forest health problems, increase potential wildfire intensity and severity, increase risk potential for home owners, while at the same time decrease areas of forage for wild ungulates and decrease adequate habitat of Canadian Lynx.

Horse logging and light mechanical methods are recommended to decrease the foot print that will remain post treatment.

Thinning, tree removal, and creation of shaded fuel breaks between BLM land and private land would reduce the chances of wildfire from spreading from private to public land or from public

to private land and enhance access for fire fighters, while improving effectiveness of aerial suppression air tankers and helicopters. The shaded fuel breaks can be constructed by selectively removing understory trees and shrubs. Vegetation not removed from public lands should be piled and ignited during late fall or winter during conditions of good smoke dispersal. In certain instances, large trees may also need to be removed; however, large Douglas fir trees need to be avoided during thinning or removal projects. The shaded fuel break should be visually appealing, as private homes are located within close proximity.

The expected results of thinning, removal, piling and burning, and shaded fuel breaks are increased forest floor vegetative diversity and additional forage provided for elk, deer, moose, and snowshoe hare. Identified Canadian Lynx habitat can be enhanced by designating a number of vegetation piles to be left for possible den areas and snowshoe hare cover. Scattered large standing dead trees may be left on sight as raptor perches and possible nest areas. Once accomplished, these actions will improve forest health and decrease the risk that wildfire will evade initial suppression tactics.

7.0 METHODOLOGY

The mitigation actions proposed herein for the Hoback Ranches assessment area are based on information acquired from fuel and structure surveys, a public meeting, and interviews of community officials. The majority of information presented in this report was gathered during the time period between July 15 and 23, 2002.

The fire-hazard assessment area was defined by BLM. The BLM requested a minimum of 5 fuel survey points in the assessment area to be evaluated by Dynamac (Map 1). The fuel survey points occurred in sections where BLM and USFS land exists. At each survey point, digital photographs were taken of the surrounding area in each of the four cardinal directions. Additionally, a fire hazard assessment was completed which rated the hazard posed by topographic characteristics of the area and fuel sources. The rating elements included slope, aspect, elevation, fuel type, fuel density, and fuel bed depth, and were assigned a risk category of low, medium, or high, as defined by BLM.

Dynamac staff also collected information on the flammability and defensibility of structures on private land from 14 sections located within one mile of public land within the assessment area. The structural hazard assessment rated the structures, building material and the distance of

flammable fuels to the structures located within a section. The rating elements included structure density, proximity of flammable fuels to the structures, building materials, survivable space, types of roads, response times, and access. Each element was assigned a low, medium, or high hazard category based on rating criteria defined by BLM.

A public meeting was convened on July 17, 2002, at the Bondurant Fire Hall in Bondurant, Wyoming from 6:00 to 9:00 p.m. The community was invited to attend through a newspaper article in the local paper and announcements posted in public places such as Hoback Ranches notice and information boards. Dynamac, BLM, USFS, State of Wyoming Forestry Division, and the North Carolina Type II IMT staff attended the public meeting to hand out firewise brochures, obtain information from the community on hazardous fire situations and desired conditions, and to be an informational resource to those attending the meeting. The Dynamac Community Relations Specialist conducted interviews with numerous local public officials and residents. Individuals or groups interviewed include the county fire warden, emergency management director, county sheriff, USFS, and State of Wyoming Forestry Division employee(s), and local residents.

A second public meeting was convened in September 2002, in Pinedale, Wyoming to review the draft report and receive public input. A computer model (Far Site) of potential fire behavior before and after proposed treatment in the assessment area was presented at the public meeting.

8.0 PROPOSED PROJECTS AND PRIORITY

The proposed projects and their priority are based on information obtained from the fuel and structure surveys, community meeting, and interviews. The following specific action items, in order of priority, were identified to reduce the hazard of wildfire in the Hoback Ranches assessment area:

- Continue the cooperation among BLM, USFS, and State of Wyoming, Sublette County, and local residents concerning wildland fire and forest health issues. Initiate MOU with BLM and USFS, addressing the forest health and fuels planning issues in the assessment area.
- Reduce diseased timber and fuel loadings on adjacent public lands within the WUI.
- Reduce the buildup of fuels and diseased trees within the WUI on private lands, along roads and near homes in the assessment area.
- Construct shaded firebreaks along the borders between public lands and private lands.

- Improve upon and create additional water storage points for fire suppression.
- Continue public education efforts on proper firewise activities such as landscaping, use of fire resistant building materials, proper access roads, and emergency evacuation procedures.
- Maintain wildlife habitat and scenic quality of the assessment area.

The locations of the proposed forest health, fuel reduction projects, and fuelbreaks are illustrated on **Map 2**. These projects are proposed because of the impact they would have on reducing the hazard of wildland fire in the Hoback Ranches assessment area. The fuel survey and visual examination of the assessment area demonstrated the widespread occurrence of overstocked mixed conifer stands. Numerous residents at the community meeting are in favor of reducing the buildup of hazardous fuels in the assessment area, increasing water sources, and the construction of fuel breaks. The structure survey identified a lack of firewise practices associated with structures in each section. Therefore, a public education and outreach program should continue to inform and encourage specific actions that will reduce the chances of wildfire damaging structures. The public outreach program received the lowest priority, not because of low importance, but because it is an ongoing need throughout the assessment area, while the other proposed actions are time and location-sensitive. However, the public education and outreach program may, in the long run, prove to be the most effective in reducing wildland fire in the Hoback Ranches assessment area.

8.1 Fuels Reduction and Firebreak Recommendations

Forest Health, Fuels Reduction and Fuelbreaks: The USFS and BLM are partners in a nationwide fuels reduction and forest health project. The Hoback Ranches assessment area is of primary importance to these agencies and to the State of Wyoming. One of the objectives of the project is to reduce the buildup of hazardous fuels and improve forest health. The BLM, USFS, and private landowners may choose to enter into agreements to reduce the accumulation of hazardous fuels in the assessment area. In addition, BLM and private landowners, through a partnership, may choose to have BLM construct shaded firebreaks that are maintained by Hoback Ranches' residents. Sections 3, 5, 7, 9, and 27 (T36N R112), where BLM land is adjacent to private land (Map 2) are recommended for shaded fuel breaks. Fuel breaks on public lands could be designated as equestrian trails. Forest health projects include removal of diseased and over stocked trees by thinning and selective removal.

Type of Fuels Treatment: Commercial thinning, selective horse logging (post and pole), selective light mechanized tree removal combined with piling and burning are proposed to improve forest health and reduce the amount of flammable vegetation in T36N R112 W, Sections 3, 5, 6, 7, 8, and 9. The proposed treatment area, approximately 2,240 acres, includes all the BLM-administered acres that comprise these sections. Areas with steep slopes, springs, seeps, and riparian areas in Sections 8, 9, and 10 will require additional planning and consideration. The treatments could be implemented in multiple phases over a time period of four to six years.

The first operational phase can include shaded fuel breaks, where needed, on BLM lands that border private property. Shaded fuel breaks are areas where understory trees and large shrubs are removed to create an area relatively free of midlevel fuel. Recommended minimum canopy distance is 20 feet. Grasses, forbs, and low-flammable shrubs may be left to control soil erosion. Certain trees may also be left in the fuel break for aesthetic appeal. Trees that are left in the fuel break should have limbs removed to as high as is practicable (10 to 20 feet) from the ground. The vegetation can be removed in the fuel break by hand crews, mechanical treatment and/or limited herbicide treatments. Excessive vegetative litter should be piled and burned or removed. The fuel breaks should be approximately one and one-half times the adjacent fuel height in width, but may be wider or narrower depending on slope, topography, and the prevailing wind. Approximately 2, 1.00, 0.25, 0.25, 0.5, 0.5, and 0.5 mile(s) of firebreaks are suggested in T36N R112E Sections 3, 9, 10, 8, 5, 6, 7 and respectively. Additional phases will include thinning, removal, piling and burning on BLM land.

The second operation phase addressing forest health consists of thinning and tree removal by horse and light mechanical methods. Action is a necessity in this area. A “no action” decision will result in additional diseased, dying, and dead trees while simultaneously increasing dead fuel loading and potential fire intensity and severity. The area is mixed conifer, Fuel Model 10, generally termed a “long interval” fire forest. Canopy density, combined with ladder fuels and down/dead/woody material measured or observed during field assessments, indicates a high potential for torching, spotting, crowning, and possible crown fires.

The tree removal should include Sections 3, 5, 6, 7, 8, 9 and 10 in T36N R 112W. The objective is selective removal of diseased and other trees yielding decreased stand density with consideration to wildlife habitat, recreation and viewshed. Standard Federal environmental and silviculture requirements and methods would be met and applied. It is recommended that

mechanical apparatus be restricted to the BLM approved skid trails to yield a smaller post removal foot print. Diseased and overstocked tree removal is the objective. The steep areas with little ground cover near Kismet Peak should be examined for stability prior to tree removal. Impacts to seeps and springs located on BLM land that may provide the water source to residents lower in elevation should be avoided. Coordination with various BLM and USFS specialists prior to the tree removal and stand cruising will also be required. Public viewing of similar projects conducted by the State of Wyoming Division of Forestry via photos or in person is encouraged during the environmental assessment phase of this project.

Locations of Fuel Breaks and Forest Health Treatments: Map 2 shows the locations of the proposed fuels reduction treatments and shaded fuel breaks. Based on ownership, the BLM and private landowners would be responsible for approximately 75 percent (BLM lands) and 25 percent (along Rim Road), respectively, of the fuels reduction treatments. An appropriate split of construction and maintenance between the BLM and private landowners is reasonable for the firebreaks, which would depend on agreements reached through partnerships.

The construction of shaded fuel breaks should be East to West in the assessment area. Although some of the recommended fuel breaks are not on the border of BLM and private property, they are recommended because the location is favorable for slowing wildfire spread, suppression tactics and access. The shaded fuel breaks are intended to take advantage of topographic features (ridges) and preexisting roads. Middle slope fuel breaks should be avoided if possible.

The first fuel break should be in T36N R112E, southwest quarter of Section 3, just off Rim Road. This fuel break would be to the north, along a ridge on BLM land next to Section 4 for one-half mile, then east to the center of Section 3 for one-half mile (a portion of this area is sagebrush/grass and aspen) and again north from the center of Section 3 to the BLM/USFS border (an old trail east of the Waston Draw road should expedite this portion), for a total of 1.5 miles. From the starting point of the southwest corner of Section 3, a fuel break following the boundary of Sections 3 and 10 for approximately one-half mile is also needed. In total, 2 miles of fuel breaks on BLM land in T36N R112W Section 3 should be created.

The second recommended fuel break is on BLM land, T36N R112 E, Sections 9 and 10. The fuel breaks in Sections 9 and 10 should utilize and improve upon the four-wheel drive road going through the middle of each section east to west. At total of one and one-quarter miles of fuel break improvement is needed along this road. Cutting and repairing of the barbwire fence

on the north side of the road will also need to be done to accomplish the fuel break. The steep undulating terrain on the BLM/private land border in Section 9 includes at least six draws or coulees. A fuel break in this area would yield questionable value, would be very difficult to construct or maintain, and should be avoided.

The third shaded fuel break, located in T36N R112W, Section 8, is a continuation of the Section 9 fuel break. Starting at the 8,522-foot mountain in the northwest quarter of the northwest quarter of Section 9, the fuel break can go northwest one-quarter mile down a ridge to the BLM/private land corner on the border of Sections 8 and 9, then north in Section 8 along the BLM/private land border for one-quarter mile into Section 5 and one-quarter mile north in Section 5 up to the aspen stand in the northwest quarter of the southwest quarter of Section 5, for a total of three-quarters of one mile.

An intermittent shaded fuel break is recommended from east to west on BLM land across the center of T36N R112W Section 5 for one-quarter mile. This fuel break should start at the aspen stand in the northwest quarter of the southwest quarter of Section 5 and go west over a ridge and down to the sagebrush/grass and an old stock pond.

The final recommended fuel break is located in Sections 6 and 7 of T36N R112E. This fuel break begins in the southwest quarter of the southeast quarter of Section 6 on BLM land. The fuel break goes south, up a ridge for one-quarter mile to the Section 7 border and continues south in Section 7 for one-half mile to the center of Section 7 were BLM and private land go from north/south to east west. Though not anchored, this fuel break will provide a stop gap for west to east burning fires ignited on private land. The steep undulating terrain west of this final recommended fuel break would not yield a functional fuel break for other than low intensity fires.

Tree removal and thinning are also recommend to be conducted east to west in coordination with the fuel breaks. Sections 3, 5, 6, 7, 8, 9,and 10, T36N R112E, will need to be cruised and marked. Seeps, springs, and riparian areas will need to be identified, access secured, and environmental planning and consultation efforts completed. Thinning and removal projects could be coordinated between BLM and USFS for public lands with MOU implementation. However, access is needed to BLM lands, and should be attained prior to project implementation.

Project Timing: BLM generally schedules projects in the following manner: Year One is the year during which identification and justification of projects occurs, treatment objectives are determined, and field surveys begin. In Year Two, projects that require compliance with the National Environmental Policy Act (NEPA) are planned, analyzed, and designed; projects that do not require NEPA compliance begin implementation. In Year Three, NEPA projects begin implementation. All steps are contingent on available funding. In Year Four, post-treatment monitoring begins. The fuel breaks are high priority and should be initiated during Spring 2003. Planning forest health and fuels thinning, removal, piling, and burning should be initiated during Winter 2003, with actual implementation occurring during Spring 2004. Both efforts will require considerable public input and cooperation, and the timing may depend on funding and federal clearances.

Project Necessity: The combination of fuel breaks and fuel reduction has been shown to be an effective means by which communities can reduce the risk of fire in the WUI. Forest health issues (standing dead, dying, diseased trees) will continue without action, yielding increased potential wildland fire and WUI problems and forest degradation. A "no action" decision would exacerbate the current fuel loading problem, increase forest health problems, increase potential wildfire intensity and severity, increase risk potential for home owners, while at the same time decrease areas of forage for wild ungulates and decrease adequate habitat of Canadian Lynx.

A solid assessment of specific hazards and threats to a community has helped to identify problems and solutions for both federal and private landowners, and has offered opportunities for partnerships and agreements. The risk of wildland fire losses would be reduced for approximately 106 existing homes in the vicinity, as well as homes under construction, at the time of the assessment.

8.2 Water Storage Facilities

Improve Water Storage Capabilities: The assessment area has some ponds for drafting of water by fire equipment but additional capability is needed and distribution improved. The Sublette County Fire Department can receive bladders from federal excess through the Wyoming State Forestry Division, USFS, or BLM.

Type of Water Storage Facility: The proposed water storage bladder would be at least 5,000 gallons in size and be equipped to fill tanker trucks at an acceptable rate.

Locations of Water Storage Facility: The locations and placement of the proposed water storage tanks should be determined by the Sublette County Fire Deputy Fire Chief and coordinated with the Hoback Ranches Improvement District.

Project Timing: Generally adhering to the timing guidelines set forth in Section 8.1, the water bladders could be installed during Spring 2003 or when funding and appropriate clearances are obtained.

Project Necessity: Readily available water sources have been shown to be effective in reducing the risk of wildland fire. This assessment of specific hazards and threats to a community has helped to identify problems and solutions for both State, County, federal and private landowners, and offers opportunities for partnerships and agreements. Approximately 106 structures within Hoback Ranches, would have reduced risk from wildland fires.

8.3 Improve Rim Road Ingress and Egress

Purpose of Rim Road Improvements: Rim Road, in Section 9, is posted with a 8,000-pound GVW limit. This section of road is in need of support on the down slope side and erosion control measures on the uphill side.

Project Timing: Rim Road needs additional engineering input and improvement as soon as possible; the target year could be 2003. This date will be dependent upon available Hoback Ranches funding.

Project Necessity: Most fire engine weights exceed the road's weight limit, giving limited ingress and egress for fire suppression crews to this area and adjacent to this area. Rim Road is also designated as an evacuation route for Hoback Ranch occupants.

8.4 Community Education and Outreach

Purpose of Public Education and Outreach: The purpose of the community-wide education program is to 1) educate the public of the dangers of wildfire in the area with aggressive prevention measures during summer months; 2) urge residents to take responsibility in reducing the risk of wildfire and to create defensible space around their residence; and 3) increase

awareness of the natural role of low-intensity fire in woodland or grassland ecosystems and the benefits from removal of overstocked trees. The public education and outreach program could be co-sponsored by the BLM, USFS, Sublette County, and the Hoback Ranches Fire Committee through a partnership agreement.

Outreach Occurrence: An annual "Firewise Clean-Up Week" is one tool that is recommended to encourage residents to create defensible and survivable space around their residence. In conjunction with the Firewise Clean-Up Week, specific demonstration projects may be designed and utilized to educate residents about longer-term investments they could make to increase fire safety. The clean-up week would occur in conjunction with public demonstrations, education programs, and speakers on wildfire and firewise practices.

Outreach Timing: The annual "Firewise Clean-up Week," education program, and public demonstrations would likely be most effective in the spring or early summer to remind people to prepare their properties for the coming fire season.

Outreach Necessity: Citizen involvement in wildfire mitigation in and around communities is a necessary element for success. Public education and outreach is an effective means of engaging the public in the process of reducing risks to a community, can help identify problems and solutions for both federal and private landowners, and offer opportunities for partnerships and agreements. Such education and outreach has been shown to motivate homeowners to take firewise measures around their individual properties, thereby contributing to the reduction of wildfire hazards in a community. Further, a community education and outreach program would help identify problems and solutions for both federal and private landowners, and offer opportunities for partnerships and agreements.

9.0 POTENTIAL SOURCES OF FUNDING

Potential funding sources should be coordinated with Sublette County, State of Wyoming Forestry Division, BLM, and the USFS. Potential funding sources include but are not limited to the following:

- Volunteer fire assistance: Assistance is funded 50/50 by USFS grants to State Foresters.

- Federal Excess Property: USFS equipment loan to State Foresters. Recipients include State Forestry Programs and Volunteer Fire Services.

- Economic Action Programs (EAP): A USFS, State, and Private program that can assist in diversification for uses of forest products, including utilization of hazardous fuels byproducts; 80% federal funding, 20% nonfederal funding (http://www.fs.fed.us/r3/spf/community/).

- Assistance to Fire Fighters: The FEMA and US Fire Administration Program can improve fire fighting operations, services and equipment; 90% federal funding, 10% nonfederal funding (www.usfa.fema.gov).

- Pre-Disaster Mitigation Program: A FEMA program delivered through the state's emergency management agency to be used for emergency management and assistance to local governments to develop all hazard mitigation plans.

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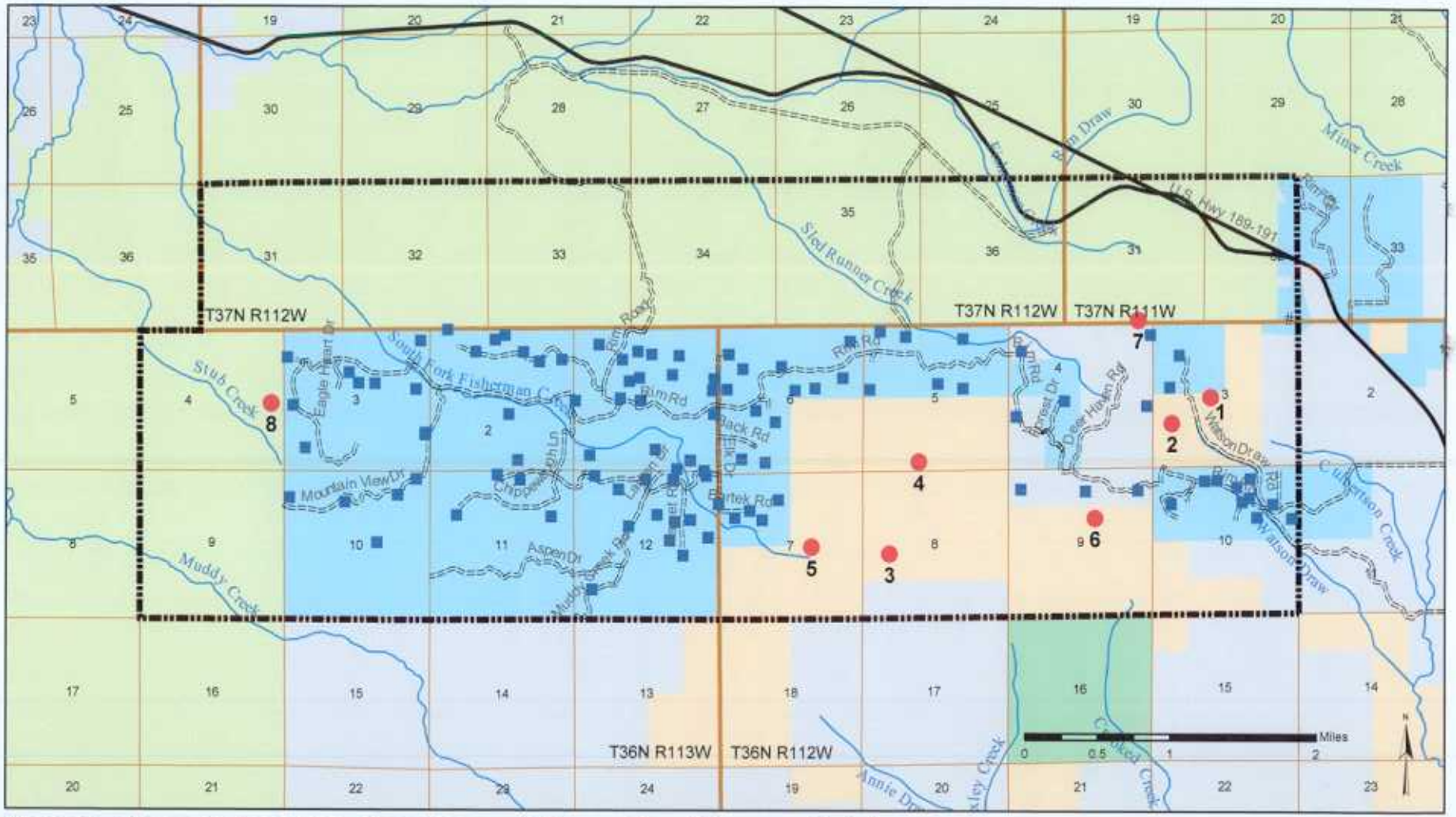
Appendix: Maps



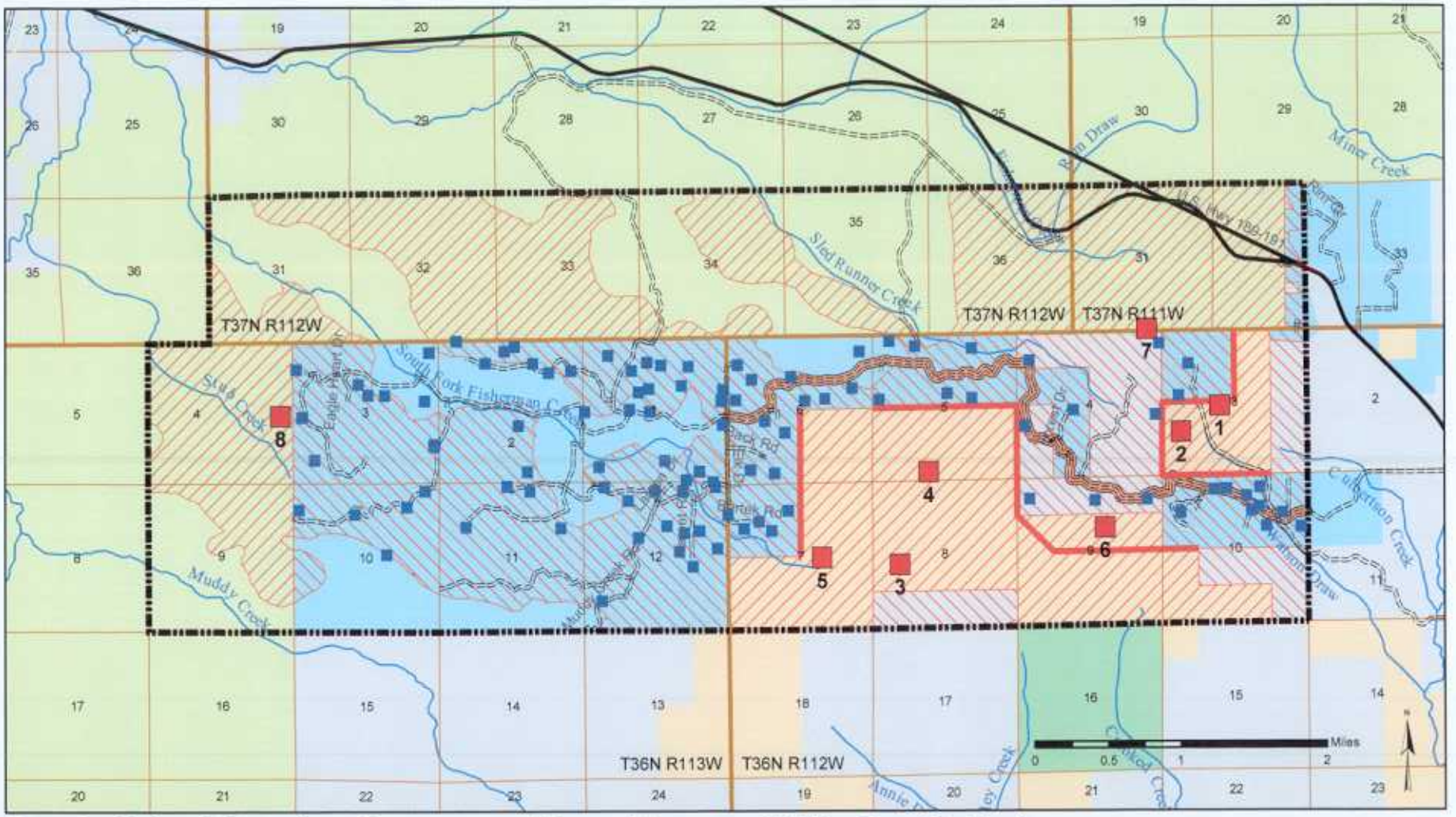
Map 1: Hoback Ranches Assessment Area - Fuel Survey Points

Land Ownership

- BLM
- STATE
- USFS
- Private Parcels
- Subdivision

- Assessment Area Boundary
- Highways
- Rural Roads
- Streams

- Fuel Assessment Point
- Structures



Map 2: Hoback Ranches Assessment Area - Proposed Mitigation Projects

Land Ownership

- BLM
- STATE
- USFS
- Private Parcels
- Subdivision

- Assessment Area Boundary
- Highways
- Rural Roads
- Streams

- High Fuel Risk
- Structures

Mitigation

- Shaded Fuel Break
- Fuel Reduction, Roadway
- Forest Health Thinning and Removal, Agency
- Forest Health Thinning and Removal, Private